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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : **Confirmation No. 4795**

Yoshiko KOBAYASHI et al. : **Docket No. 2002-0040A**

Serial No. 10/031,172 : **Group Art Unit 1762**

Filed January 17, 2002 :

**A PROCESS FOR FORMING A MULTI-
LAYER COATING FILM**

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ACCOUNT NO. 23-0975

INFORMATION DISCLOSURE STATEMENT

Assistant Commissioner for Patents,
Washington, DC 20231

Sir:

Pursuant to the provisions of 37 CFR 1.56, 1.97 and 1.98, Applicants request consideration of ☒ the references listed on attached form PTO-1449 and/or ☐ the additional information identified below in paragraph 3. A legible copy of each reference listed on the form PTO-1449 and each U.S. patent application listed below is enclosed, except a copy is not provided for each reference previously cited by or submitted to the Patent Office in prior parent application Serial No. _____.

1a. ☒ This Information Disclosure Statement is submitted:

within three months of the filing date (or of entry into the National Stage) of the above-entitled application, or

before the mailing of a first Office Action on the merits or the mailing of a first Office Action after the filing of an RCE,

and thus no certification and/or fee is required.

1b. ☐ This Information Disclosure Statement is submitted

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after the events of above paragraph 1a and prior to the mailing date of a final Office Action or a Notice of Allowance or an action which otherwise closes prosecution in the application, and thus:

(1) ☐ the certification of paragraph 2 below is provided, **or**

(2) ☐ the fee of \$180.00 specified in 37 CFR 1.17(p) is enclosed.

1c. ☐ This Information Disclosure Statement is submitted:

after the mailing date of a final Office Action or Notice of Allowance or action which otherwise closes prosecution in the application, and prior to payment of the issue fee, and thus:

the certification of paragraph 2 below is provided, and

the fee of \$180.00 specified in 37 CFR 1.17(p) is enclosed.

1d. ☐ Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this information was not received by any individual designated in 37 CFR 1.56(c) more than 30 days prior to the filing of this Information Disclosure Statement. Accordingly, this application is entitled to the protection of 37 CFR 1.704(d) with regard to the filing of this Information Disclosure Statement.

2. It is hereby certified

a. ☐ that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the Statement, or

b. ☐ that no item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the person signing the certification after making reasonable inquiry, was known to any individual designated in §1.56(c) more than three months prior to the filing of the Statement.

3. ☐ Consideration of the following list of additional information (including any copending or abandoned U.S. application, prior uses and/or sales, etc.) is requested.
4. For each non-English language reference listed on the attached form PTO-1449, reference is made to:
- a. ☐ a full or partial English language translation submitted herewith,
 - b. ☐ a foreign patent office search report (in the English language) submitted herewith,
 - c. ☐ the concise explanation contained in the specification of the present application at page ____,
 - d. ☐ the concise explanation set forth in the attached English language abstract,
 - e. ☐ the concise explanation set forth below or on a separate sheet attached to the reference:
 - f. ☒ Copies of the following references are enclosed with an English abstract:

- (A) JP 10-231454 A
- (B) JP 55-056165 A
- (C) JP 64-085260 A
- (D) JP 11-147069 A
- (E) JP 52-043817 A

Among the above references (B), (D) and (E) are cited in PCT Search Report and were listed in the previously filed Information Disclosure Statement.

The following are comments on the differences between the present invention and the above-mentioned prior art references.

This invention relates to a process for forming a multi-layer coating film by applying, to a substrate, intermediate paint, metallic paint and clear paint by the 3C1B method, which process is characterized in that said intermediate paint:

- a) contains 0.5 to 5 PHR of flat talc powder of
 - ① a size of 0.5 to 10 μm in longer directionand
 - ② 0.01 to 1 μm in thickness, and

b) has a total pigment content of 40 to 100 PHR.

It has been known from the above-mentioned references (B), (C), etc., to blend talc with an intermediate paint with a view towards improving chipping resistance. Owing to its flat shape, however, talc per se has been the cause of deterioration of the finish, in particular, the smoothness of a multi-layer coating film. The objective of the present invention is to improve the smoothness of coating film, while keeping the effect of chipping resistance produced by talc. The present invention has successfully achieved said objective by employing fine flat talc powder which has specific size and thickness, blending said fine flat talc powder in a specific small amount and controlling the total pigment content of the intermediate paint within a specific range.

None of the above-mentioned prior art references discloses an intermediate paint which has such a characteristic combination as defined by the above a) ①, ② and b) of the present invention.

Reference (A) makes no mention of the size of talc employed. Moreover, the intermediate paint which is used in working examples has a total pigment content of 24 PHR, which is lower than the range stipulated in the present invention.

Reference (B) discloses that 20 to 50 PHR of flat talc having an average particle size of 5 to 20 μm may be blended in an intermediate paint. Thus, the amount of talc blended is very large.

The examples of Reference (C) disclose the concept of blending 30 PHR of talc powder having a particle size of 10 to 15 μm . This amount of talc powder blended is much larger than the range (0.5 to 5 PHR) stipulated in the present invention.


Reference (D) discloses a process of forming a high-saturation metallic color multi-layer coating film by the 3C1B method on a metal-made substrate on which electrodeposition coating film alone or both an electrodeposition coating film and intermediate coating film have been formed in that order. Reference (D), however, gives no concrete explanation about the intermediate paint.

Reference (E) relates to a coating composition in which an inorganic powder such as talc is used as a filler. Said inorganic powder is, however, blended in an amount of 10 to 400 PHR, which is far above the range of 0.5 to 5 PHR stipulated in the present invention.

5. [] A foreign patent office search report citing one or more of the references is enclosed.

Respectfully submitted,

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